54.   (New) A method of assisting in the prediction of diabetes mellitus in an individual, comprising the steps of:

a)   obtaining a nucleic acid sample from an individual;

b)   determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of diabetes mellitus in the individual as compared with an individual having an adenosine at said position.

REMARKS

Claim Amendments

Claims 14, 15, 17 and 18 have been amended to clarify that "determining the nucleotide present at nucleotide position 29 of exon 10" is with regard to a glycerol kinase gene. Support for this Amendment can be found throughout the specification as filed, for example, at page 38, lines 17-26, and Figure 6.

Claim 15 has been amended to incorporate the language of dependent Claim 16. Claim 16 has been cancelled.

Furthermore, Claims 14, 15 and 17 have been amended to claim a "method of predicting" the recited disorders.

Claim 18 has been amended to claim a method of assisting in the prediction of cardiovascular disease.

New Claims 51-54 have been added and are directed to a "method of assisting in the prediction" of the recited disorders as originally contained in Claims 14, 15 and 17.

No new mater has been added.

Rejection of Claims 15-16 and 18 Under 35 U.S.C. § 112, First Paragraph

The Examiner has rejected Claims 15-16 and 18 under 35 U.S.C. § 112, first paragraph, stating that "the specification, while being enabling for assisting in the prediction of impaired glucose tolerance, type II diabetes or cardiovascular disease, does not reasonably provide enablement for the prediction of cardiovascular disease or all types of diabetes prediction or type I diabetes assisting in prediction. The specification does not enable any person skilled in the art

to which it pertains, or with which it is most clearly connected, to use the invention commensurate in scope with these claims" (Office Action, page 2).

Specifically, the Examiner stated that the "specification has no working examples demonstrating a direct correlation between a defect in the glycerol kinase gene at position 288 with cardiovascular disease or diabetes mellitus" (Office Action, page 2). Additionally, the Examiner cites Gaudet *et al.* (*Am. J. Hum. Genet., 66*:1558-68 (2000); Ref. AR) as teaching "in analyzing 18 men with said defect that while all of them had severe hyperglycerolemia, they were apparently otherwise healthy" (Office Action, page 2).

Gaudet *et al.* teach that at the time of the reported study, these 18 men appeared to have no overt disease state; *however*, these individuals did exhibit abdominal obesity, significantly higher body-mass index, waist circumference, and total body fat (Gaudet *et al.*, page 1562-63). The reference does not disclose whether these individuals remained healthy, or if they later developed cardiovascular disease or diabetes. Applicants' claimed invention is directed to methods of predicting or assisting in the prediction of impaired glucose tolerance, diabetes mellitus, hyperglycerolemia, or cardiovascular disease. Gaudet *et al.* do not describe the health of their study group at a later date.

However, in light of Applicants' claim amendments, the Examiner's rejection is moot. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of Claim 14-18 Under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected Claims 14-18 Under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner states that Claims 14, 15, 17 and 18 are unclear as to which gene is being analyzed.

Applicants have amended the claims to clarify the gene being analyzed as a glycerol kinase gene.

Applicants believe the claims, as amended, even more particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 341-0036.

Respectfully submitted,

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MARKED UP VERSION OF AMENDMENTS

Claim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

14. (Amended) A method of predicting [or assisting in the prediction of] impaired glucose tolerance in an individual, comprising the steps of:

a) obtaining a nucleic acid sample from an individual;

b) determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of impaired glucose tolerance in the individual as compared with an individual having an adenosine at said position.

15. (Amended) A method of predicting [or assisting in the prediction of] type 2 diabetes mellitus in an individual, comprising the steps of:

a) obtaining a nucleic acid sample from an individual;

b) determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of type 2 diabetes mellitus in the individual as compared with an individual having an adenosine at said position.

17. (Amended) A method of predicting [or assisting in the prediction of] hyperglycerolemia in an individual, comprising the steps of:

a) obtaining a nucleic acid sample from an individual;

b) determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of hyperglycerolemia in the individual as compared with an individual having an adenosine at said position.

18.   (Amended) A method of [predicting or] assisting in the prediction of cardiovascular disease in an individual, comprising the steps of:

a)   obtaining a nucleic acid sample from an individual;

b)   determining the nucleotide present at nucleotide position 29 of exon 10 <u>of a glycerol kinase gene,</u>

wherein presence of a guanine at said position is predictive of cardiovascular disease in the individual as compared with an individual having an adenosine at said position.

51.   (New) A method of assisting in the prediction of impaired glucose tolerance in an individual, comprising the steps of:

a)   obtaining a nucleic acid sample from an individual;

b)   determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of impaired glucose tolerance in the individual as compared with an individual having an adenosine at said position.

52.   (New) A method of assisting in the prediction of type 2 diabetes mellitus in an individual, comprising the steps of:

a)   obtaining a nucleic acid sample from an individual;

b)   determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of type 2 diabetes mellitus in the individual as compared with an individual having an adenosine at said position.

53.   (New) A method of assisting in the prediction of hyperglycerolemia in an individual, comprising the steps of:

a)   obtaining a nucleic acid sample from an individual;

b)   determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of hyperglycerolemia in the individual as compared with an individual having an adenosine at said position.

54.   (New) A method of assisting in the prediction of diabetes mellitus in an individual, comprising the steps of:

a)   obtaining a nucleic acid sample from an individual;

b)   determining the nucleotide present at nucleotide position 29 of exon 10 of a glycerol kinase gene,

wherein presence of a guanine at said position is predictive of diabetes mellitus in the individual as compared with an individual having an adenosine at said position.